

INTERNATIONAL SEARCH REPORT

Int. Application No.
PCT/DK2004/000062

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K38/17 A61P35/00 C07K14/47 C07K16/18 G01N33/574
G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, CHEM ABS Data, Sequence Search, EMBASE, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ANDERSEN MADSE HALD ET AL: "Identification of a cytotoxic T lymphocyte response to the apoptosis inhibitor protein survivin in cancer patients"</p> <p>CANCER RESEARCH, vol. 61, no. 3, 1 February 2001 (2001-02-01), pages 869-872, XP002283853</p> <p>ISSN: 0008-5472</p> <p>the whole document</p> <p>-----</p> <p>-/--</p>	<p>1-7, 12-17, 20-50</p>

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Z" document member of the same patent family

Date of the actual completion of the international search

10 June 2004

Date of mailing of the international search report

01.09.2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ANDERSEN MADS HALD ET AL: "Spontaneous cytotoxic T-cell responses against survivin-derived MHC class I-restricted T-cell epitopes in situ as well as ex vivo in cancer patients" CANCER RESEARCH, vol. 61, no. 16, 15 August 2001 (2001-08-15), pages 5964-5968, XP002283854 ISSN: 0008-5472 the whole document</p>	1-7, 12-17, 20-50
X	<p>SCHMITZ MARC ET AL: "Generation of survivin-specific CD8+ T effector cells by dendritic cells pulsed with protein or selected peptides" CANCER RESEARCH, vol. 60, no. 17, 1 September 2000 (2000-09-01), pages 4845-4849, XP002283855 ISSN: 0008-5472 the whole document</p>	1-7, 12-17, 20-50
X	<p>HIROHASHI YOSHIHIKO ET AL: "An HLA-A24-restricted cytotoxic T lymphocyte epitope of a tumor-associated protein, survivin." CLINICAL CANCER RESEARCH : AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH. JUN 2002, vol. 8, no. 6, June 2002 (2002-06), pages 1731-1739, XP002283856 ISSN: 1078-0432 the whole document</p>	1-6, 12-17, 21-50
X	<p>DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; 16 November 2002 (2002-11-16), SCHMIDT SUSANNE M ET AL: "Survivin Is a Shared Tumor-Associated Antigen Expressed in a Broad Variety of Malignancies and Recognized by Specific Cytotoxic T-Cells." XP002283859 Database accession no. PREV200300357946 abstract & BLOOD, vol. 100, no. 11, 16 November 2002 (2002-11-16), page Abstract No. 3675, 44TH ANNUAL MEETING OF THE AMERICAN SOCIETY OF HEMATOLOGY; PHILADELPHIA, PA, USA; DECEMBER 06-10, 2002 ISSN: 0006-4971</p>	1-6, 12-17, 21-50

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FORTUGNO PAOLA ET AL: "Survivin exists in immunohistochemically distinct subcellular pools and is involved in spindle microtubule function" JOURNAL OF CELL SCIENCE, vol. 115, no. 3, 1 February 2002 (2002-02-01), pages 575-585, XP002283857 ISSN: 0021-9533 page 577, right-hand column, paragraph 4 - page 578, left-hand column, paragraph 1 -----	42,43
A	WO 00/03693 A (JENNER BIOTHERAPIES INC) 27 January 2000 (2000-01-27) page 2, line 25 - page 3, line 30 page 5, line 3 - page 6, line 21 page 9, line 1 - line 20; claims -----	
A	US 6 245 523 B1 (ALTIERI DARIO C) 12 June 2001 (2001-06-12) cited in the application the whole document -----	
P,X	WO 03/102023 A (IMMATICS BIOTECHNOLOGIES GMBH ; STEVANOVIC STEFAN (DE); WEINSCHENK TON) 11 December 2003 (2003-12-11) page 25 - page 34; sequence 80 -----	1-7, 12-17, 20-50
P,X	SCHMIDT SUSANNE M ET AL: "Survivin is a shared tumor-associated antigen expressed in a broad variety of malignancies and recognized by specific cytotoxic T cells." BLOOD, vol. 102, no. 2, 15 July 2003 (2003-07-15), pages 571-576, XP002283858 ISSN: 0006-4971 the whole document -----	1-6, 12-17, 21-50

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ in written format
 - ☒ in computer readable form
 - c. time of filing/furnishing
 - ☒ contained in the international application as filed
 - ☒ filed together with the international application in computer readable form
 - ☐ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 44
because they relate to subject matter not required to be searched by this Authority, namely:
Although claim 41 is directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 20 (in part) and 44
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-7, 12-17, 20-50 (all partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claim 41 is directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.2

Claims Nos.: 20 (in part) and 44

Present claim 20 relates to an extremely large number of possible products. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the products claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the products mentioned in the table of pages 20-22 of the description.

Present claim 44 relate to a product defined by reference to a desirable characteristic or property, namely its ability to block the binding of a molecule which binds a peptide according to the invention. The claims cover all products having this characteristic or property, whereas the application does not provide support within the meaning of Article 6 PCT nor disclosure within the meaning of Article 5 PCT for such products. In the present case, the claim so lacks support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claim also lacks clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, no search has been carried out for claim 44.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1 (claims 1-7, 12-17, 20-50 all in part and as applicable)

An MHC Class I-restricted epitope peptide derived from survivin, said peptide being selected from the group consisting of SEQ ID NO: 1-SEQ ID NO: 74, respectively; A composition or pharmaceutical composition comprising such peptide; A complex of such peptide and a Class I HLA molecule; A method for detecting the presence of survivin using such complex; Antibodies binding to such peptide; uses of such peptide or composition for the preparation of a medicament for the treatment of cancer. All relating to SEQ ID NO: 1 (FLKLDERERA)

Invention 2-74 (claims 1-50 all in part and as applicable)

As for invention 1 but:

- Invention 2, relating to SEQ ID NO: 2
- Invention 3, relating to SEQ ID NO: 3
-
- Invention 74, relating to SEQ ID NO: 74

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0003693 A	27-01-2000	AU 4990999 A WO 0003693 A1	07-02-2000 27-01-2000
US 6245523 B1	12-06-2001	AU 736587 B2 CA 2271783 A1 EP 0950103 A2 JP 2002514060 T KR 2000057159 A WO 9822589 A2 US 2003100525 A1 AU 7301898 A	02-08-2001 28-05-1998 20-10-1999 14-05-2002 15-09-2000 28-05-1998 29-05-2003 10-06-1998
WO 03102023 A	11-12-2003	DE 10225144 A1 WO 03102023 A1	18-12-2003 11-12-2003